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TO: Grants Control Office
Office of Space Science
National Aeronautics and Space Administration
Washington, D. C. 20546

SUBJECT: Status Report on work done under NASA Grant SC-NAG-167-61

PERIOD: 1 January 1965 to 1 July 1965.

1. The purpose of this grant was to enable a study of the physics of the region between the earth and the sun to be carried out. This work was done by (a) studying the neutrons produced by the cosmic radiation in the earth's atmosphere, a number which is profoundly modulated by inter-planetary fields and matter, and (b) by studying the acceleration processes occurring in the sun, which in turn produce high energy particles which generate neutrons upon arriving at the earth.
2. During the period cited, we made two successful balloon flights from Hyderabad, India, in which neutron detectors were carried to elevations of approximately 120,000 feet by balloons. Both flight sets were recovered in good condition and satisfactory data was obtained. The operation was a part of the official IQSY-EQEX expedition.
3. We are continuing the operation of our neutron monitor at College, Alaska. The data from this device is being reduced, and sent to the World Data Center as per international agreement.
4. We have also readjusted the flight sets recovered from the Indian operation, and expect to fly them later this summer from Fort Churchill, Manitoba, Canada. We are especially interested to make these flights **this year, to take** advantage of the quiet sun conditions, and to make them more directly comparable with the data from India. The sets have been recalibrated and are in good condition.
5. We made a series of photographs of the total eclipse of the sun, which took place on 30 May, 1965. The photographs were made from Bellingshausen Island, in the Society Island group. Five different cameras, with various lenses, filters and films were employed. By good fortune, the weather was good, and this set of pictures is the only ground-based set obtained of this event since the expedition to Manuae Island was clouded out. The purpose of the set of photographs was to obtain data to enable motions in the corona to be studied. It is hoped that this study may throw some light on acceleration mechanisms occurring in the sun.

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	2	none
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BIBLIOGRAPHY:

"Review of Cosmic Ray Physics" by S. A. Korff
Invited paper, January Meeting of the American Physical Society,
Bull. Amer. Phys. Soc., Vol. 10, P. 48, Paper DA2, 28 January, 1965.

"The IQSY-EQEX Expedition to India" by S. A. Korff
Physics Today, Vol. 18, #6, Pages 26-29, (June 1965).

Lectures:

16 February, 1965 - "The Cosmic Ray Background"
New York Medical Society.

4 March, 1965 - "Cosmic Ray Studies"
College of Engineering, Osmania University
Hyderabad, India

11 March, 1965 - "Cosmic Ray Neutron Studies"
Tata Institute Group Seminar, Osmania University
Hyderabad, India.

2 April, 1965 - "Cosmic Ray Neutron Studies"
Meteorology Department Colloquium
New York University

4 May, 1965 - Opening Address
American Astronautical Society, Chicago.